

Montana Board of Oil and Gas Conservation

Environmental Assessment

Operator: RIM Operating, Inc.
Well Name/Number: Brethren 32-29
Location: SW NE Section 29 T32N R58E
County: Sheridan, MT; **Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 20-30 days drilling time.

Unusually deep drilling (high horsepower rig): No, triple derrick drilling rig to drill a Ratcliffe/Nisku/Red River formation single vertical well, 11,650' MD/TVD.

Possible H₂S gas production: Slight

In/near Class I air quality area: No Class I air quality area nearby.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: No special concerns.

Water Quality

(possible concerns)

Salt/oil based mud: Use freshwater and freshwater mud system for drilling surface hole (Rule 36.22.1001) and main hole will utilize oil based invert mud to TD.

High water table: No high water table anticipated.

Surface drainage leads to live water: No live water nearby. Closest drainage is Cottonwood Creek, about 2/5 of a mile to the north from this location.

Water well contamination: None. Closest water wells are 2/5 of a mile to the north, 3/5 of a mile south 7/10 northwest, and 1.2 miles southeast from this location. Depths of these wells range from 32' to 135'.

Surface hole will be drilled with freshwater and freshwater drilling muds. The surface casing setting depth. of 3,000' should be below all freshwater zones. Porous/permeable soils: No, gravelly sandy clay soils.

Class I stream drainage: No Class I stream drainages.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: 3,000' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent problems in and around freshwater slough.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated.

High erosion potential: Small cut, up to 3.6' and moderate fill, up to 4.8', required.

Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, large well site 300' X 400'

Damage to improvements: Slight, surface use is a cultivated field.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other _____

Comments: Access will use existing Hwy 573/ E. Lake Hwy. A new access of about 1200' will be built to location. Surface hole fluids will be land applied with surface owner approval. Surface hole (freshwater) cuttings will be mixed buried on site. Oil based invert mud cuttings will be mixed with straw or sawdust and trucked to an approved waste disposal facility. Oil based drilling fluids will be taken to permitted disposal wells. Pits will be closed after drying. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Residence about 2/5 of a miles to the northwest and 7/10 southeast of this location. Possibility of H2S: Yes, slight.

Size of rig/length of drilling time: Triple drilling rig 20 to 30 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): Medicine Lake National Wildlife Refuge is about 6 miles to the southwest of this well location. U.S. Fish & Wildlife Service land 1.3 miles to the north from this location.

Proximity to recreation sites: Medicine Lake National Wildlife Refuge is about 6 miles to the southwest of this well location.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened or endangered are the Whooping Crane and Piping Plover. The Montana National Heritage Program lists nineteen (19) species of concern: Clark's Grebe, Baird's Sparrow, Le Conte's Sparrow, Nelson's Sparrow, Sprague's Pipit, Burrowing Owl, American Bittern, Ferruginous Hawk, Piping Plover, Black Tern, Bobolink, Whooping Crane, Caspian Tern, Franklin's Gull, Black-crowned Night-Heron, American White Pelican, Forster's Tern, Common Tern, and Western Hog-nosed Snake

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: Private surface lands. No concerns.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: Private cultivated surface lands. No concerns.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: No concerns. Development oil well within an existing oil field, Dwyer Field.

Remarks or Special Concerns for this site

Well is a 11,650' MD/TVD vertical Ratcliffe/Nisku Red River well test

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur, but can be mitigated in a short time.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): John Gizicki

(title:) Compliance Specialist

Date: June 11, 2014

Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center website.

(Name and Agency)

Sheridan County water wells

(subject discussed)

June 11, 2014

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Sheridan County

(subject discussed)

June 11, 2014

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T32N R58E

(subject discussed)

June 11, 2014

(date)

Montana Cadastral Website

(Name and Agency)

Surface Ownership and surface use Section 29 T32N R58E

(subject discussed)

June 11, 2014

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____